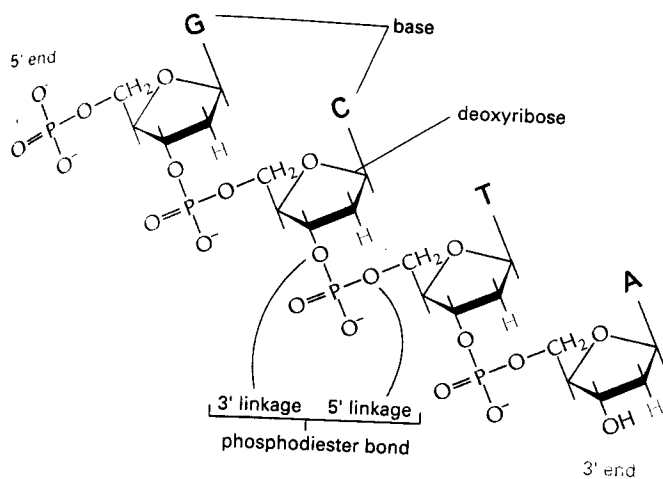
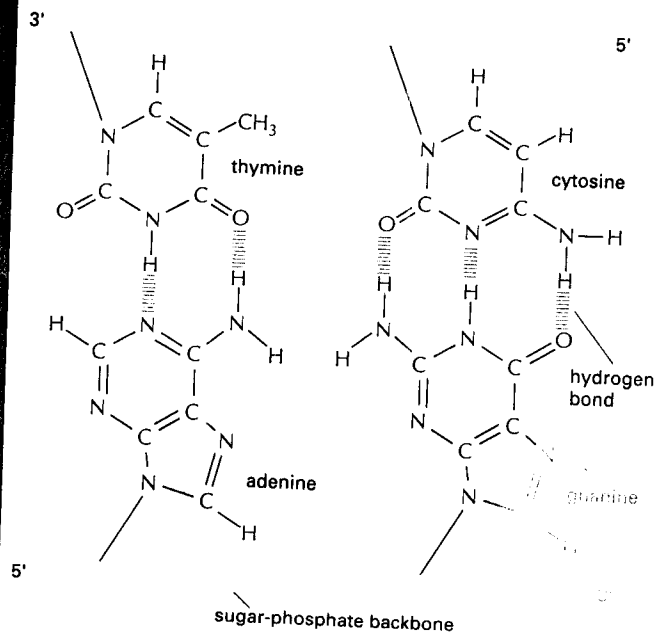


## SUGAR-PHOSPHATE BACKBONE OF DNA

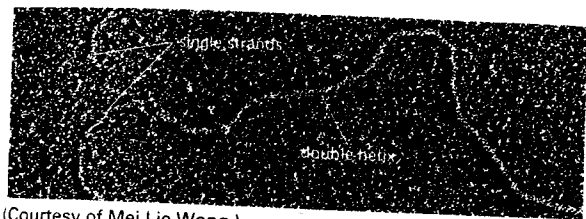


## FOUR BASES AS BASE PAIRS OF DNA



Specific hydrogen bonding between G and C and between A and T (A and U in RNA) generates complementary base-pairing.

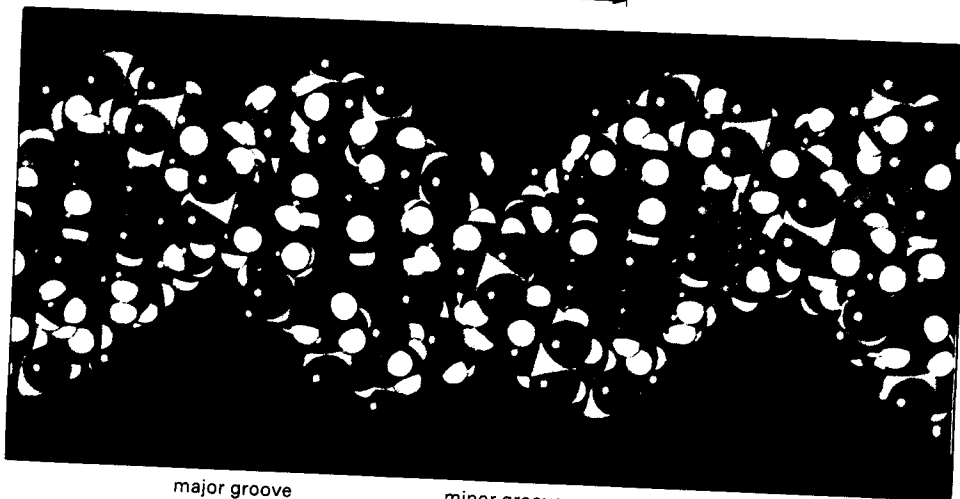
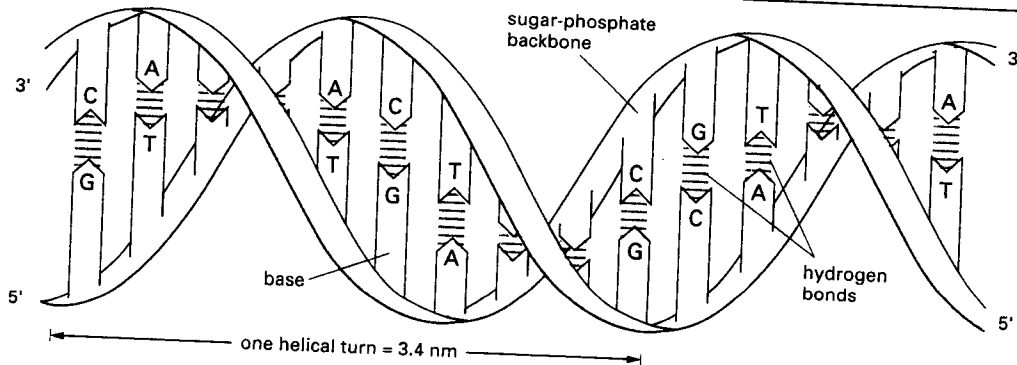
## ELECTRON MICROGRAPH OF DNA



(Courtesy of Mei Lie Wong.)

## DNA DOUBLE HELIX

In a DNA molecule two antiparallel strands that are complementary in their nucleotide sequence are paired in a right-handed double helix with about 10 nucleotide pairs per helical turn. A schematic representation (top) and a space-filling model (bottom) are illustrated here.



# **MOLECULAR BIOLOGY OF THE CELL**

## **THIRD EDITION**

**Bruce Alberts • Dennis Bray  
Julian Lewis • Martin Raff • Keith Roberts  
James D. Watson**



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**Front cover:** The photograph shows a rat nerve cell in culture. It is labeled ( *yellow* ) with a fluorescent antibody that stains its cell body and dendritic processes. Nerve terminals ( *green* ) from other neurons (not visible), which have made synapses on the cell, are labeled with a different antibody. (Courtesy of Olaf Mundigl and Pietro de Camilli.)

**Dedication page:** Gavin Borden, late president of Garland Publishing, weathered in during his mid-1980s climb near Mount McKinley with MBoC author Bruce Alberts and famous mountaineer guide Mugs Stump (1940–1992).

**Back cover:** The authors, in alphabetical order, crossing Abbey Road in London on their way to lunch. Much of this third edition was written in a house just around the corner. (Photograph by Richard Olivier.)